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x, of the equations (14), *are precisely the only possible solutions of the given problem of the Calculus of Variations; or, the only possible solutions of the given problem of the Calculus of Variations are given by the characteristic torsion strips of the equation* (2), *regarded as a differential equation.*

We might now easily go on to set up, as we have done in Part I, § 6 for equations of the first order, the equations of the common characteristics of two partial differential equations of the second order, and the condition that they be in involution, regarding the common characteristics as the common possible solutions of two problems in the Calculus of Variations, which reduce to a single problem of the type given above with one additional auxiliary condition of the type (2). Finally, we might seek the characteristics for two differential equations of the first order in two dependent variables, and so on. These problems will, however, offer no essential difficulty to the reader, and we will not enter into a discussion of them here; the main point of the existence of a connection between the theory of characteristics and the Calculus of Variations already having been demonstrated.

SHEFFIELD SCIENTIFIC SCHOOL,
YALE UNIVERSITY.
FEBRUARY, 1903.

ERRATUM.

Page 139, line 7: instead of $q = \psi'(y)$, read $q = \phi'(y)$.

ON THE UNIFORMITY OF THE CONVERGENCE OF CERTAIN ABSOLUTELY CONVERGENT SERIES

BY MAXIME BÔCHER

IF the series

$$u_1(x) + u_2(x) + \cdots \tag{1}$$

is absolutely and uniformly convergent for the values of x in a certain interval, and if we rearrange the terms, will the resulting series necessarily be uniformly convergent? This question must be answered in the negative as the following example shows:

$$x^2 - x^2 + \frac{x^2}{1+x^2} - \frac{x^2}{1+x^2} + \frac{x^2}{(1+x^2)^2} - \frac{x^2}{(1+x^2)^2} + \cdots \tag{2}$$

Here $S_{2n} = 0, \qquad S_{2n+1} = \dfrac{x^2}{(1+x^2)^n}$.